

## CLAIMS

1) A machine for forming and wrapping stacks (31) of products (2a), the machine comprising a stacking plate (26) rotating in steps about a respective axis (27); a loading station (25) and an unloading station (33) for said stacking plate (26); and a number of radial seats (30, 30a) formed on said stacking plate (26), each said seat (30; 30a) receiving a relative said stack (31); and the machine being characterized by also comprising a reject station (32) interposed between said loading and unloading stations (25, 33), each said seat (30; 30a) having an inlet (29) movable with said stacking plate (26) along an annular path (P) extending about said axis (27) and through said loading, reject, and unloading stations (25, 32, 33); feed means (22) for feeding said products (2a) successively to said inlet (29) at said loading station (25); first and second unloading means (66, 34) for successively unloading said stacks (31) at said reject station (32) and said unloading station (33) respectively; sensor means (70) for controlling said first unloading means (66); and counter-pusher means (51) fitted movably inside each said seat (30; 30a), and moved along the seat (30; 30a), into an enabling position enabling said sensor means (70), by said products (2a) fed successively to the relative said inlet (29) at said loading station (25).

2) A machine as claimed in Claim 1, wherein each

said seat (30) is coaxial with another said seat (30a) to form a pair of coaxial seats (30, 30a); the seats (30, 30a) in each said pair having common said counter-pusher means (51).

5           3) A machine as claimed in Claim 1 or 2, wherein said seats (30, 30a) are formed along slots (46) arranged in coaxial pairs; the slots (46) in each pair (47) of coaxial said slots (46) communicating with each other and extending along a diameter of said stacking plate (26);  
10 the counter-pusher means (51) of the seats (30, 30a) formed in two coaxial said slots (46) being common to both said seats (30, 30a), and comprising a single diametrical rod (52) having a first and a second end head (53), each of which is mounted to slide, inside a  
15 respective said seat (30; 30a), between an outer limit position in which the head (53) is located at said inlet (29) of the relative said seat (30; 30a), and an inner limit position in which said head (53) is located at an inner end of the relative said seat (30; 30a).

20           4) A machine as claimed in Claim 3, and also comprising brake means (56) fitted to each said rod (52) to control slide of the rod (52) along the relative said pair (47) of coaxial slots (46).

          5) A machine as claimed in Claim 4, wherein said  
25 brake means (56) are located at a central portion of said stacking plate (26).

          6) A machine as claimed in one of Claims 3 to 5, wherein stop means (50) are housed inside each slot (46)

in each pair (47) of coaxial slots (46) to define the relative said seats (30, 30a), and which cooperate with the relative said head (53) when the head (53) is in the inner limit position.

5        7) A machine as claimed in one of the foregoing Claims, wherein each said seat (30; 30a) has a central longitudinal bottom strip (54) defining, along the seat (30; 30a), two longitudinal passages (55) on opposite sides of said strip (54); each of said first and second  
10        unloading means (66, 34) comprising a fork-shaped ejecting member (66; 34), which is movable back and forth, in a direction parallel to said axis (27), through said two passages (55) to expel the respective said stack (31) from each said seat (30; 30a) at said reject station  
15        (32) and said unloading station (33) respectively.

8) A machine as claimed in one of the foregoing Claims, wherein said sensor means (70) are located along said annular path (P) and diametrically opposite said loading station (25); said unloading station (33) being  
20        located along said annular path (P), between said loading station (25) and said sensor means (70).

9) A machine as claimed in one of the foregoing Claims, wherein said sensor means (70) comprise a proximity sensor (71).

25        10) A machine as claimed in Claim 10, wherein said proximity sensor (71) is an inductive type.

11) A machine as claimed in one of the foregoing Claims, wherein push means (64) are provided at said

reject station (32) to expel a said stack (31) radially from said stacking plate (26); and conveying means (65) are provided to receive the expelled said stack (31).

12) A machine as claimed in Claim 11, wherein said  
5 push means (64) are pneumatic push means.